phenomenon. However, the effect of platelet count (PC) on myocardial injury and subsequent clinical outcomes in STEMI is unclear. We investigated the effect of platelet count on microvascular obstruction (MVO), infarct size (IS) and major adverse cardiac events (MACE) in patients with large anterior STEMI undergoing primary percutaneous coronary intervention enrolled in the INFUSE-AMI trial.

METHODS Participants from INFUSE-AMI were categorized according to platelet count tertiles at clinical presentation. Primary endpoints were cardiac magnetic resonance (MRI) assessed MVO (percentage of left ventricular [LV] mass) at 5 days and IS (% of LV mass) at 30 days. Secondary endpoint was the rate of major adverse cardiac events (MACE) at 1 year, defined as the composite of death, reinfarction, new-onset heart failure (HF) or re-hospitalization for HF. Multivariable regression analysis was used to evaluate the correlation between PC and MACE at 1 year.

RESULTS Of 447 patients enrolled in the INFUSE-AMI study, 135, 137 and 136 were distributed in the 1st (PC $\leq 216\times10^5/\mu L$), 2nd (PC >216 to $266\times10^5/\mu L$) and 3rd tertile (PC $>266\times10^5/\mu L$), respectively. Patients with lower PC were older, more commonly male, and had lower white blood cell count at baseline. At 5 days, there were no differences in median MVO across platelet tertiles (0.3% vs. 0.8% vs. 0.7%; $p = 0.86$). Similarly, at 30 days there were no differences in median IS (17.4% vs. 17.1% vs. 17.7%; $p = 0.84$). Following multivariable adjustment, PC still had no effect on 30-day myocardial IS ($p = 0.78$). Finally, while unadjusted analysis demonstrated no difference in 1-year MACE rates across platelet tertiles (11.3% vs. 10.4% vs. 10.0%; $p = 0.81$), following adjustment lower PC was associated with increased risk of 1-year MACE (per each 100.000/μL decrease; Hazard Ratio=1.06; 95% CI: 1.01 - 1.12; $p = 0.03$).

CONCLUSIONS In patients with large anterior STEMI, baseline platelet count did not have an effect on MVO and infarct size assessed by MRI. However, lower PC correlated with higher risk of MACE at 1 year. Further studies are required to explore the role of thrombocytopenia in the prognosis of patients with STEMI.

CATEGORIES CORONARY: Acute Myocardial Infarction

KEYWORDS Infarct size, Platelet count, ST-segment elevation myocardial infarction, anterior

TCT-266

Predictors of Mortality in Non-Anterior ST-segment Elevation Myocardial Infarction: Insights from the Harmonizing Outcomes with Revascularization and Stents in Acute Myocardial Infarction (HORIZONS-AMI) Trial

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BACKGROUND Patients with non-anterior ST-segment elevation myocardial infarction (NA-STEMI) have better prognosis than those with anterior STEMI (A-STEMI). In contrast to A-STEMI, little is known regarding factors affecting long-term prognosis in patients with NA-STEMI. We therefore sought to determine the clinical and angiographic predictors of long-term mortality in patients with NA-STEMI undergoing primary percutaneous coronary intervention (PPCI).

METHODS Participants from the HORIZONS-AMI trial were categorized according to ECG-defined ST-segment elevation location in NA-STEMI and A-STEMI. By the ECG core laboratory, NA-STEMI was defined as ST elevation in the lateral (V5, V6, I, aVL), inferior (II, III, aVF), infero-lateral (I, II, III, aVF and V5-V6) or antero-lateral (V3 - V6, I, aVL) ECG leads. Independent predictors of mortality at 3 years were identified by Cox proportional hazards modeling including clinical variables (clinical model), quantitative coronary angiography (QCA) variables (QCA model), and both (combined model).

RESULTS Among 2,578 patients undergoing PPCI with core laboratory determined STEMI location, 1,813 (70.3%) had NA-STEMI. Compared with A-STEMI, NA-STEMI patients were younger, more commonly smokers, and had higher baseline left ventricular ejection fraction (LVEF). In patients with NA-STEMI, 84 deaths (4.8%) occurred within 3 years of follow-up. Clinical variables independently associated with 3-year all-cause mortality in NA-STEMI were age, Killip Class, peripheral vascular disease, hemoglobin, platelet count, white blood cell count, symptom-to-balloon time and heart rate at presentation. In the QCA model, the only variable independently associated with mortality was baseline LVEF. Significant predictors in the combined model are shown in Table 1.

Combined clinical and QCA multivariable model for 3-year mortality in patients with non-anterior STEMI.

Independent predictors of 3-year mortality	HR [95% CI]	p-value
Age (per year increase)	1.07 [1.04 - 1.10]	<0.0001
Killip class (per each class increase)	2.03 [1.32 - 3.13]	0.001
White blood cell count (per 10.000/μL increase)	1.12 [1.03 - 1.21]	0.006
Symptom to balloon time (per 30 minutes increase)	1.03 [1.02 - 1.04]	<0.0001
LVEF (per each % decrease)	1.03 [1.00 - 1.06]	0.02

LVEF: Left Ventricular Ejection Fraction

CONCLUSIONS In the HORIZONS-AMI trial, patients with NA-STEMI had a lower clinical risk profile and higher LVEF compared with A-STEMI. Although generally considered low risk, a combination of readily available clinical and QCA variables identify NA-STEMI patients who are at increased risk for mortality after primary PCI.

CATEGORIES CORONARY: Acute Myocardial Infarction

KEYWORDS Predictors, ST-segment elevation myocardial infarction

TCT-267

Agreement Between Pre-Hospital and Emergency Department ECG in the Diagnosis of STEMI – Patterns of Concordance and Discordance

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BACKGROUND Pre-hospital (PH) ECG enables field diagnosis and triage of STEMI patients to specialized STEMI receiving centers. Despite the proven benefits of early identification, false-positive ECG interpretations and unnecessary cardiac catheterization laboratory activations remain a common, challenging problem. We report the incidence and patterns of agreement between PH and Emergency Department (ED) ECGs in a large regional STEMI system of care.

METHODS A total of 34 hospitals provide primary PCI as part of a regionalized STEMI system of care in Los Angeles County. Each facility is required to enter data into a county-wide registry of all patients with possible STEMI transported by emergency medical services. PH ECG diagnosis of STEMI is based on software interpretation. ED diagnosis of STEMI is determined by the receiving physician. Registry data was analyzed for all patients treated in this system from 2011 to 2014. McNemar's test was used to assess the significance of the difference between the two correlated proportions.

RESULTS There were 16771 STEMI cases in the registry over four years. Either the PH or ED ECG was not obtained or not documented in 1358 patients (8%). For cases where both ECG interpretations were available, 87% (13512/15413) of PH ECG were positive for STEMI, whereas 44% (6732/15413) of ED ECG were positive for STEMI (Table 1). Disagreement occurred in 57% of cases. The most common pattern was discordance with positive PH ECG and negative ED ECG for STEMI. The odds ratio for discordance was 7.5, 95%CI 7-8, $p<0.00001$. The high rate of discordance between positive PH and negative ED ECG was attributed to poor quality ECG (1770, 23%), dysrhythmia (2032, 26%), mimics such as pericarditis, hyperkalemia, and Brugada (800, 10%), early repolarization (188, 2%), vasospasm (5, 0.1%), or undocumented (3026, 39%). Despite the high frequency of false positive ECGs, a total of 7355 patients underwent cardiac catheterization. PCI was performed in 5624 and 71 patients received thrombolytic therapy.

CONCLUSIONS Disagreement between PH and ED ECGs is the rule, not the exception. Reducing false positive PH ECG results will require improved technology, earlier provider review of PH ECGs and incorporation of clinical data into the STEMI activation algorithm.

Table 1. Concordance and Discordance of ECGs

	ED Positive	ED Negative	Total
PH Positive	5691	7821	13512
PH Negative	1041	860	1901
	6732	8681	15413

CATEGORIES CORONARY: Acute Myocardial Infarction

KEYWORDS Electrocardiography, ST-segment elevation myocardial infarction network, ST-segment elevation myocardial infarction, acute